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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Laurence J. Newell

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07/07/2004

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EXAMINER

BELLO, AGUSTIN

ART UNIT

PAPER NUMBER

2633

12

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/853,556

**Applicant(s)**

NEWELL ET AL.

**Examiner**

Agustin Bello

**Art Unit**

2633

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9,10.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

Art Unit: 2633

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 15, 19, and 20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 09/854,153. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications recite an optical fiber communications system including an optical fiber, comprising: receiving low-speed channels, multiplexing of the low speed channels; and frequency division multiplexing the low-speed channels to produce an electrical high-speed channel for transmission across the communications system. The application differs from the claimed invention in that in that the 09/854,153 application fails to specifically teach that a power adjustment is made to the low speed channels in order to compensate for dispersion in the system. However, making power adjustments to transmitted signals is very well known in the art and would have been obvious to one skilled in the art at the time the invention was made. One skilled in the art would have been motivated to

increase the power of the low speed channels of the 09/854,153 application in order to improve the overall fidelity of the system.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 and 7-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luo (U.S. Patent No. 6,094,298) in view of Fee (U.S. Patent No. 5,956,165).

Regarding claims 1 and 15, Luo teaches in an optical fiber communications system (Figure 1B) including a first node (reference numerals 102-106 in Figure 1B) coupled to a second node (reference numeral 116-120 in Figure 1B) by an optical fiber (reference numeral 110 in Figure 1B), a method for transmitting information from the first node to the second node, the method comprising: frequency division multiplexing (column 3 lines 39-40) a plurality of electrical lowspeed channels (reference numerals  $S_1$ - $S_n$  in Figure 1B) to form an electrical high-speed channel (e.g. output of combiner reference numeral 106 in Figure 1B); converting the electrical high-speed channel from electrical to optical form (e.g. via reference numeral 108 in Figure 1B) to form an optical high-speed channel (e.g. input to fiber 110 in Figure 1B), wherein each of the electrical low-speed channels is allocated a different frequency band within the optical highspeed channel (inherent in frequency division multiplexed systems); and transmitting

Art Unit: 2633

the optical high-speed channel over the optical fiber (reference numeral 1100 in Figure 1B) to the second node (reference numeral 116-120 in Figure 1B). Luo differs from the claimed invention in that Luo fails to specifically teach generating a control channel containing overhead information comprising digital data or frequency division multiplexing the control channel with low speed electrical channels to form a high speed electrical channel so that the control channel is allocated to a different frequency band within the optical highspeed channel. However, generation of a control channel containing overhead information is well known in the art. Fee teaches generation of a low data rate signal/subcarrier modulation digital control channel containing overhead information that rides on a high data rate optical signal for the purpose of network management and control (column 4 lines 33-52, column 6 lines 18-21, column 7 lines 6-15). Furthermore, one skilled in the art would clearly have recognized that the low data rate signal/subcarrier modulation digital control channel containing overhead information could easily have incorporated into the system of Luo as one of the frequency inputs (e.g.  $f_n$ ) shown in Figure 1B of Luo, thus providing a control channel (e.g.  $f_n$ ) frequency division multiplexed with low speed electrical channels (reference numerals  $S_1$ - $S_n$  in Figure 1B) to form a high speed electrical channel so that the control channel is allocated to a different frequency band within the optical highspeed channel (inherent in frequency division multiplexed systems). One skilled in the art would have been motivated to modify the device of Luo according to the disclosure of Fee in order to provide a means for network management and control (column 7 lines 6-15 of Fee). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to generate a control channel containing overhead information comprising digital data and frequency division multiplexing the control channel with low speed electrical channels to

Art Unit: 2633

form a high speed electrical channel so that the control channel is allocated to a different frequency band within the optical highspeed channel.

Regarding claims 2 and 16, the combination of Luo and Fee teaches that wherein, within the optical high-speed channel, the control channel is more robust than the low-speed channels to impairments in the optical fiber (column 5 lines 16-19 of Fee).

Regarding claims 3 and 17, the combination of Luo and Fee teaches that a frequency band for the control channel is narrower than a frequency band for the low-speed channels (as seen in Fee's 1MHz subcarrier channel in comparison to the 10 GHz data rate signal).

Regarding claims 4 and 18, the combination of Luo and Fee teaches that the control channel is located at a frequency lower than that of the electrical low-speed channels (as indicated by the "subcarrier" designation by Fee throughout).

Regarding claim 5, the combination of Luo and Fee differs from the claimed invention in that it fails to specifically teach that the control channel has a data rate of approximately 2 Mbps. However, one skilled in the art would clearly have recognized that the system of Luo and Fee could have transmitted the control channel at any desired rate including 2 Mbps. One skilled in the art would have been motivated to transmit the control channel at a rate of 2 Mbps in order to shorten the transmit time from node to node. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to transmit the control channel at a data rate of approximately 2 Mbps.

Regarding claims 7-12, the combination of Luo and fee teaches the overhead information includes information used for controlling, configuring, testing, measuring, isolating and

Art Unit: 2633

establishing communication with the second node (column 7 lines 6-15 of Fee) in that the overhead transmitted by Fee is capable of all these features.

Regarding claims 13 and 19, the combination of Luo and Fee teaches receiving the optical high-speed channel (output of reference numeral 112 in Figure 1B); converting the optical high-speed channel from optical to electrical form to recover the electrical high-speed channel (reference numeral 114 in Figure 1B); and frequency division demultiplexing the control channel from the electrical high-speed channel (reference numeral 116 in Figure 1B).

Regarding claims 14 and 20, the combination of Luo and Fee teaches generating a second control channel containing second overhead information (reference numeral 276 in Figure 2 of Fee), the second overhead information comprising digital data (inherent); frequency division multiplexing the second control channel with a second plurality of electrical low-speed channels to form a second electrical high-speed channel (as discussed in the combination of Luo and Fee in claim 1); converting the second electrical high-speed channel from electrical to optical form to form a second optical high-speed channel wherein each of the second control channel and the second electrical low-speed channels is allocated a different frequency band within the second optical high-speed channel (as seen in Luo); and transmitting the second optical high-speed channel over a second optical fiber (reference numeral 264 in Figure 2 of Fee). The combination of references differs from the claimed invention in that it fails to specifically teach the second overhead information is transmitted from the second node to the first node. However, bi-directional optical communication is very well known in the art. Furthermore, Fee appears to suggest that the overhead control channel could be transmitted back to the first node since all nodes are located within a closed network (see Figure 1 of Fee). One

Art Unit: 2633

skilled in the art would have been motivated to employ bi-directional overhead information transmission as part of the combination of references in order to allow the nodes to communicate control and status information between each other, thus allowing the second node to also control the first node, a feature consistent with the disclosure of Fee. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to allow the second overhead information to be transmitted from the second node to the first node in a bi-directional manner.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Luo in view of Fee and Hubinette (U.S. Patent No. 6,289,511).

Regarding claim 6, the combination of Luo and Fee differs from the claimed invention in that it fails to specifically teach that the overhead information includes software to be loaded onto the second node. However, transmission of software to be loaded onto a second node via overhead information is well known in the art. Hubinette teaches it is well known in the art to transmit software to be loaded onto a second node via overhead information (column 4 lines 5-21). One skilled in the art would have been motivated to transmit software to be loaded onto a second node via overhead information in order to preserve much of the bandwidth of the system for wider bandwidth information carrying signals. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to transmit software to be loaded onto a second node via overhead information.

#### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.



Art Unit: 2633

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (703)308-1393. The examiner can normally be reached on M-F 8:30-6:00.

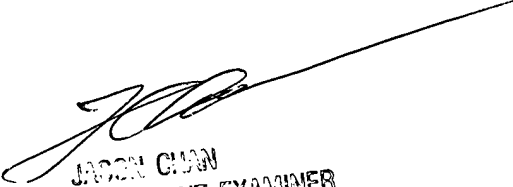
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2633

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Agustin Bello  
Examiner  
Art Unit 2633

AB



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